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## BEEF PRICES

Fresh beef is consumed in almost every family living in a locality where it can be secured, and the price of fresh beef is of more importance to the average family than is the price of any other single article of food. No item of family expenditure, except rent and clothing, requires a greater outlay by the workingman. From an investigation of 2,567 workingmen's families in the industrial communities of the United States, conducted by the United States Bureau of Labor in 1901, it was found that in such families  $6\frac{1}{2}$  cents out of every dollar spent was used to purchase fresh beef, or  $15\frac{1}{3}$  cents out of every dollar spent for food.

The fact that fresh beef requires refrigeration for a considerable part of the year is responsible to some extent for its being purchased, by the average family, in small lots every day, or two or three times a week. Thus any advance in price is constantly kept before the careful housewife. Probably few subjects have been more before the public for the past three years.

The advance in price has been charged by some people to a control of the supply, and to some extent of the prices, by a combination of the great packing-houses; by others the cause has been declared to be organizations of retail dealers, and the control of prices to a greater or less degree by such organizations. It is not the purpose of this paper to discuss the question of combination or trust control, but to show what has been the course of beef prices during recent years, and the general condition in the beef industry.

### WHAT AN ADVANCE MEANS

The average amount spent by the workingman's family in manufacturing localities for fresh beef is a little more than equal to the amount spent for the six items of tea, coffee, sugar, molasses, rice, and potatoes; therefore, an advance in the price of beef affects the family expenditure as much as would the same

advance in the price of all of these six items. Likewise, an advance in the price of beef is of the same importance as an advance in all of the four items of flour, corn meal, bread, and milk. An advance in beef of 2 cents per pound means for the workingman's family (if he buys the same grade and quantity) the expenditure of an additional amount equal to the cost of lighting, or to taxes and property insurance combined, or to the expenditure for religious purposes, or to the expenditure for books and newspapers, or to three-fourths of the expenditure for tobacco.

An advance in price usually means a curtailment of the consumption of beef and the substitution of other meats. The increased demand, of course, advances the price of such substitutes, and there is no way to avoid the increased outlay required. The vegetable diet is often prescribed during high prices, but that diet has never seemed to obtain much favor in America, unless possibly it be among a few engaged in occupations which require no great physical exertion.

#### THE HIGH PRICES OF 1902

The advance in retail prices began in 1899, at about the same time that industrial conditions improved. The extent of the advance in wholesale prices between 1890 and 1900 is well shown in the Census report on the slaughtering industry. The combined slaughtering and meat-packing establishments in the United States averaged for all fresh beef sold during the year ending May 31, 1890, 5.6 cents per pound, and for the year ending May 31, 1900, 7.2 cents per pound—an increase in price of 28.6 per cent.

In the spring of 1902 general attention was attracted to the rapid advance in the prices charged the consumer for fresh beef. Unusual conditions existed which seriously affected the supply, and consequently the price. The drought of 1901 in the central West forced many cattle onto the market in the autumn of 1901, owing to lack of pasturage. The drought being very severe in the corn-raising states, the corn crop was reduced to about three-fourths of a normal yield, thus advancing the price of corn to such an extent that it was no longer profitable to prepare cattle for

prime beef. Other things which tended to advance prices were the growth of the exports of fresh beef and the decided increase in the demand for home consumption owing to the steady employment of workingmen at better wages than had before prevailed.

The highest retail price was reached in July, 1902. After that time the cattle reached the market from the grass, and retail prices began to decline. The decline was most marked in the cheaper grades. The prime corn-fed beef maintained its price for some time after that date.

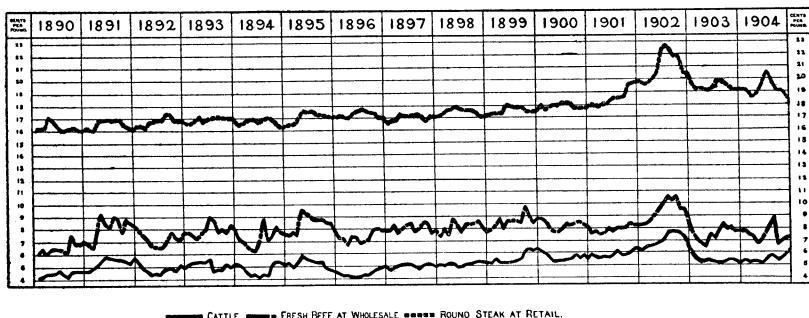
#### PRESENT PRICES

The value per pound of the fresh beef exported each year since 1890 show much higher prices during the last few years. For the years ending June 30, the average price in cents per pound was 7.42 in 1890; 7.90 in 1891; 8.19 in 1892; 8.61 in 1893; 8.61 in 1894; 8.80 in 1895; 8.44 in 1896; 7.80 in 1897; 8.36 in 1898; 8.35 in 1899; 9.01 in 1900; 9.06 in 1901; 9.62 in 1902; 9.82 in 1903; and 9.82 in 1904. For the five years ending June 30, 1894, the average export value per pound was 8.17 cents; for the five years ending June 30, 1899, 8.31 cents; and for the five years ending June 30, 1904, 9.26 cents. The average value for the last five years was 11.4 per cent. above the value for the preceding five years, and 13.3 per cent. above the value for the five years ending June 30, 1894.

Retail prices have declined since 1902, but are still higher by about 10 per cent. than the average price for the ten years from 1890 to 1899. The fact that retail prices for the past six years have been above normal, and that even since 1902 they have been on a much higher level than during any of the years in the nineties, leads one to inquire into the conditions which have produced these prices. These prices may be due to some extent to combinations; but, as has been stated before, this paper undertakes to show present conditions in the industry, and some of the natural causes which have operated to produce changes in retail prices.

THE RELATION OF RETAIL AND WHOLESALE PRICES OF BEEF AND  
PRICES OF BEEF CATTLE

On the accompanying chart has been indicated for the first of each month of the last fifteen years the mean price of good-to-extra steers in Chicago, the mean price of good-to-extra fresh beef (western sides) in Boston, and the prevailing monthly price of round steak in Boston. Boston prices of fresh beef are taken simply because the wholesale prices in that city are comparatively easily obtained. The published freight rate on fresh beef from



Monthly prices of cattle, fresh beef at wholesale, and round steak at retail,  
1890-1904

Chicago to Boston has been from 40 to 45 cents per hundred pounds almost all of the time during the last fifteen years, and therefore need not be considered in this paper. A somewhat higher grade of western beef is shipped to Boston than to other cities, and therefore the prices are likewise somewhat higher.

The course of prices of these three items is exceedingly interesting. One cannot but be surprised at the general parallelism of the lines indicated on this chart. With few exceptions, cattle and fresh beef at wholesale show the same course. The fluctuations are often greater, however, in the wholesale price of beef than in cattle. Retail beef prices follow in a general way the prices of the other two items, but rarely advance or decline to the extent of wholesale prices. During 1900, when cattle and fresh beef at wholesale declined, there was a tendency to keep up the retail prices. In 1902 the retail price advanced even more than did the wholesale.

In many articles there is sufficient margin between the wholesale and retail price to make it unnecessary to change the price to the consumer whenever there are slight changes in the price of the commodity bought at wholesale. Fresh beef, however, is usually sold on rather a close margin, and the profit to the retailer depends largely on his careful attention to the cutting to minimize the waste, and his knowledge of the trade which enables him to dispose of all parts of the carcass. The price which the retailer paid for his beef must determine the price which he charges his customers. Of course, the retailer in meat as well as in other lines of trade has various classes of customers. The same piece of meat may be sold to a doubtful book customer for a considerably higher price than would be charged a regular cash customer, but the risk is an important element in fixing the price in such cases.

A leading meat-dealer of Washington, who has had a number of years' experience, prepared the following table showing the method of cutting beef in that city, the number of pounds in each cut, and the price charged during the early part of December, 1904.

The method of cutting beef varies, of course, to some extent in different stores, and to a greater extent in different cities. Different carcasses are also cut in different ways by the same cutter in order to meet the demands of his trade from day to day, and also to sell his meat to the best advantage. The figures here shown represent the method followed in a retail store having a general trade which enables the merchant to dispose of the various cuts to the best possible advantage. This was a 306-pound side of a "top" quality corn-fed steer, and cost the dealer 7 cents per pound, or \$21.42. It cut —

71 lbs. round, which sold for.....	\$ 6.76
30 lbs. rib .....	4.73
25 lbs. shin .....	1.40
55 lbs. chuck .....	4.70
50 lbs. plate .....	2.19
75 lbs. loin .....	9.33
Trimmings (fat and bone).....	0.53
<hr/>	
306 pounds .....	\$29.64
Difference .....	\$ 8.22

The cutting in detail follows:

*71 pounds of round*

15 lbs. bouillon —

6	lbs. bouillon, first cut, at 12½ cts.	\$0.75
5½	lbs. bouillon, at 9 cts.	0.50
3	lbs. bone .....	.....
½	lb. fat .....	.....

40 lbs. round —

1½	lbs. steak, at 12½ cts.	0.19
5	lbs. for mince meat, at 12½ cts.	0.63
3	lbs. steak, at 15 cts.	0.45
2	lbs. steak, at 15 cts.	0.30
4	lbs. steak, at 14 cts.	0.56
7	lbs. for pot roast, at 14½ cts.	1.00
3	lbs. steak, at 12½ cts.	0.38
2	lbs. steak, at 12½ cts.	0.25
1½	lbs. steak, at 12½ cts.	0.19
½	lb. steak, at 15 cts.	0.08
7	lbs. for mince meat, at 10 cts.	0.70
3	lbs. for Hamburg steak, at 12½ cts.	0.38
½	lb. trimmings .....	.....
16	lbs. shank, sold to restaurant.	0.40
—		—
71	lbs. .....	\$6.76

*30 pounds of rib*

20	lbs. rib roast, prime, at 18 cts.	\$3.60
5	lbs. rib blade roast, at 12½ cts.	0.63
5	lbs. blade roast, at 10 cts.	0.50
—		—
30	lbs. .....	\$4.73

*25 pounds of shin*

7	lbs. clod, at 10 cts.	\$0.70
3	lbs. for Hamburg steak, at 10 cts.	0.30
15	lbs. soup bone —	
4	soup bones, at 10 cts each.	0.40
2	lbs. bone .....	.....
—		—
25	lbs. .....	\$1.40

*55 pounds of chuck*

15 lbs. neck —	
10 lbs. for Hamburg steak, at 10 cts.	\$1.00
5 lbs. bone .....	.....
10 lbs. rib, or three-cornered cut, at 10 cts.	1.00
3 lbs. blade bone .....	.....
27 lbs. chuck —	
5 lbs. roast, at 12 cts.	0.60
8 lbs. roast, at 10 cts.	0.80
5 lbs. roast, at 10 cts.	0.50
9 lbs. for mince meat, at 9 cts.	0.80
—	
55 lbs. ....	\$4.70

*50 pounds of plate*

5 lbs. sticking piece, at 5 cts.	\$0.25
13 lbs. plate —	
3 lbs., at 6 cts.	0.18
10 lbs., at 4 cts.	0.40
27 lbs. corned —	
11 lbs. rolled, at 8 cts.	0.88
16 lbs., at 3 cts. (to get rid of it)	0.48
1 lb. fat .....	.....
4 lbs. bone .....	.....
—	
50 lbs. ....	\$2.19

*75 pounds of loin*

10 lbs. kidney and suet —	
1 lb. kidney, at 10 cts.	\$0.10
9 lbs. fat .....	.....
8 lbs. flank —	
2 lbs. flank steak, at 12½ cts.	0.25
5 lbs. piece flank (dog meat)	0.25
1 lb. fat .....	.....
27 lbs. sirloin steak —	
3 lbs., at 12½ cts.	0.38
3 lbs., at 15 cts.	0.45
3½ lbs., at 16 cts.	0.52
3½ lbs., at 16 cts.	0.60
2½ lbs., at 18 cts.	0.41
2½ lbs., at 20 cts. (book customer, poor pay)	0.50
3½ lbs., at 18 cts.	0.59
2½ lbs., at 18 cts.	0.41
3½ lbs. trimmings .....	.....

3 lbs. hipbone tenderloin —	
2½ lbs., steak, at 20 cts.	0.50
½ lb. trimmings	.....
15½ lbs. porterhouse —	
2¼ lbs. at 25 cts.	0.57
2 lbs., at 20 cts.	0.40
2½ lbs., at 20 cts.	0.45
3¾ lbs., at 20 cts.	0.75
2¾ lbs., at 18 cts.	0.50
1½ lbs., at 18 cts.	0.27
1 lb. trimmings	.....
11½ lbs. small end of loin —	
9½ lbs. for roasting, at 15 cts.	1.43
2 lbs. fat	.....
—	
75 lbs. ....	\$9.33

*Trimmings*

20½ lbs. bone —	
3 lbs. from bouillon	
2 lbs. from shin	
5 lbs. from neck	
3 lbs. blade	
4 lbs. ribs out of plate	
3½ lbs. from loin trimmings	
¼ lb. from first cut of round	
15¾ lbs. fat —	
½ lb. from bouillon	
1 lb. from plate	
9 lbs. from loin	
1 lb. flank fat	
2 lbs. from small end of loin	
2 lbs. from loin trimmings	
¼ lb. from first cut of round	
—	
36½ lbs. ....	\$0.53

The number of pounds sold at each rate was as follows:

No. lbs.	Cents per lb.
20½ (bone) .....	2-5
16 .....	2½
15¾ (fat) .....	3
29 .....	3
10 .....	4

10	.....	5
3	.....	6
11	.....	8
14½	.....	9
56	.....	10
5	.....	12
32	.....	12½
4	.....	14
7	.....	14½
18	.....	15
7	.....	16
32	.....	18
13	.....	20
2¼	.....	25
<hr/>		<hr/>
306 lbs.	.....	9.69 cents (average)

Twenty-six and six-tenths per cent. (including trimmings) sold at 3 cents or less per pound; 34 per cent. (including trimmings) sold at 6 cents or less per pound.

The sales of an "ordinary" side of fresh beef at about the same date show a lower price, except for some of the very cheapest cuts which are usually sold at almost any price to dispose of them.

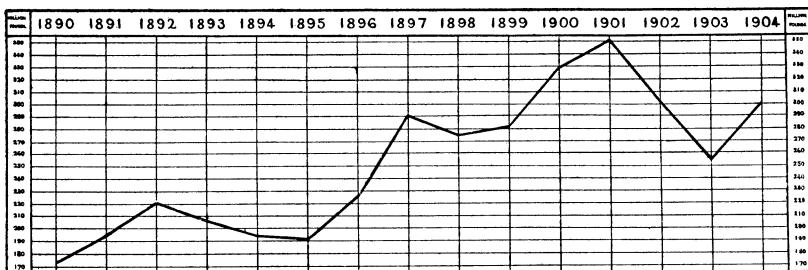
Ordinarily the prices of the various cuts—except the very cheapest—fluctuate together. There are, of course, exceptions to this; as, for instance, where, during an advance in prices, it is to the advantage of the retailer to sell as low as possible to certain desirable customers in order to hold their trade, even if he may lose money for a short time.

#### THE DEMAND FOR BEEF

The demands for fresh beef at home have increased for three reasons: (1) The increase in population, which has been gradual, but yet has amounted to almost 30 per cent. since 1890. (2) The greater proportion of persons living in cities and towns. In 1890, 43 per cent. of our population were classed as urban and semi-urban, while in 1900, 48 per cent. were so classed. These two classes constitute the beef-consuming portion of our population. (3) The better industrial conditions which have prevailed gener-

ally in almost all industries throughout the country. The steady employment of the workingman makes him a much better purchaser, and the higher wages paid in almost all lines of business have given him more money with which he can purchase better grades of beef.

As to the demands for our fresh beef abroad, it will be seen by a reference to the accompanying chart, based on the reports of the Bureau of Statistics, that the exports of fresh beef have been much greater during recent years.



Exports of fresh beef, fiscal years 1890-1904

The amount of fresh beef exported during the year ending June 30, 1904, was 54.5 per cent. greater than in 1894 and 72.9 per cent. greater than in 1890. The amount exported during the five years ending June 30, 1904, was 21.7 per cent. greater than was exported during the preceding five years, and 55.6 per cent. greater than the quantity exported during the five years ending June 30, 1894.

In 1890 the exports of fresh beef equaled 6.4 per cent. of the quantity sold by the wholesale slaughtering and meat-packing establishments, while in 1900 the exports were equal to 11.3 per cent. of all fresh beef sold by the wholesale establishments. The increase in fresh beef sold was but 7.8 per cent., while the exports increased 90 per cent.

#### THE SUPPLY

The most difficult question encountered in a study of beef prices is that of supply. If the estimates of the Bureau of Statistics of the Agricultural Department be accepted, the total number

of cattle in the United States was 15.6 per cent. greater in 1904 than in 1890; while, as has been before noticed, the population increased about 30 per cent. and the exports of fresh beef 72.9 per cent.

From the Census Office report on wholesale slaughtering and meat-packing it is seen that the number of cattle slaughtered during the year ending May 31, 1900, was 2.0 greater than during the preceding census year. The fresh beef sold by these establishments was 7.8 per cent. greater in 1900 than in 1890, while the total amount of all kinds of beef—fresh, canned, salted, and other cured—sold was 7.2 per cent. less than during the year ending May 31, 1890. It should be borne in mind that during the decade from 1890 to 1900 there was a decided tendency toward concentrating the slaughtering and packing in wholesale establishments, and that a much larger proportion of the total amount of fresh beef produced was slaughtered by the wholesale establishments in 1900 than in 1890. If for these two census years, the exports of fresh beef be deducted from the total amount sold by the wholesale establishments, the amount remaining was 40.5 pounds per capita in 1890, and 34.1 in 1900.

In order to estimate the probable amount of fresh beef sold per capita by the wholesale establishments for the year ending June 30, 1904, we may take into consideration the average weight of cattle sold in Chicago during the year ending June 30, 1900, and the year ending June 30, 1904. The weights were 1,062 and 1,039 respectively. We may assume that these figures were representative of the four great packing centers—Chicago, Kansas City, Omaha, and St. Louis—which in 1900 slaughtered five-eighths of all fresh beef sold by the wholesale slaughtering establishments. Then, further, we may take the number of cattle inspected at slaughtering in Chicago, Kansas City, Omaha, and St. Louis by the Bureau of Animal Industry in the same two years, and apply Chicago weights, when it is found that the increase in gross weight inspected in those cities in 1904 over 1900 was 21.4 per cent. If there was a corresponding increase in other slaughtering centers, the probable amount of fresh beef sold by the wholesale slaughtering and packing establishments during the

year ending June 30, 1904, was 3,545,436,373 pounds. This is based on a yield in dressed beef of 54.5 per cent. of the gross weight of the cattle. Deducting from this quantity the number of pounds exported, and dividing by 81,225,000, the estimated population, the average quantity of fresh beef sold by the wholesale slaughtering and packing establishments was 40 pounds per capita.

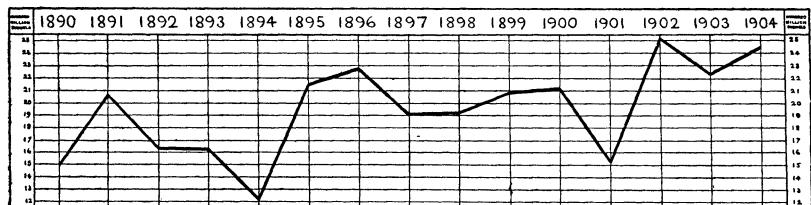
Emphasis should be placed on the fact that these per capita figures for 1890, 1900, and 1904 do not represent the domestic consumption of fresh beef, but simply the amounts sold per capita by the wholesale slaughtering and meat-packing establishments. The figures for 1890 and 1900 are computed from the Census report on the slaughtering industry, and the figure for 1904 is computed following the plan just described.

It is probable that the four great packing centers made a greater percentage of increase in sales of fresh beef between 1900 and 1904 than did wholesale establishments in other cities. If this be true, it will tend to lower the figure (40 pounds) given for 1904.

In order to produce the better grades of beef, it is absolutely necessary for the cattle to be corn-fed, and therefore one of the most important factors in determining the beef supply is the corn crop. The bulk of the cattle are produced in the great central West, and are marketed either from the grass or corn-fed. The greater portion of the feeding is done within the group of states which raises the greater share of corn. Feeding stock is simply one method of marketing grain. With a good yield of corn, feeding-cattle are purchased and prepared for a better grade of beef than if sold from the grass. With a short corn crop more cattle are slaughtered directly from the grass, or only partly corn-fed, thus reducing both the quantity and the quality of the meat produced.

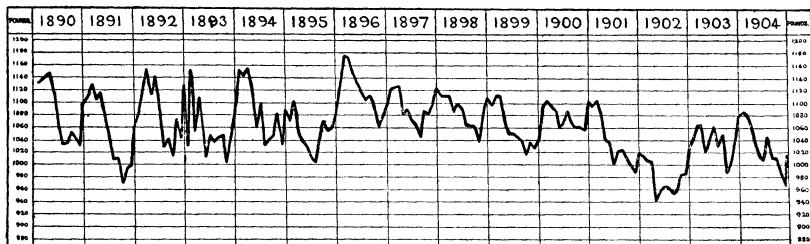
On one of the charts here presented is shown the estimate by the Department of Agriculture of the corn produced in the United States each year since 1890, and on the other is shown the average monthly weight of cattle received at Chicago for the last fifteen years.

It will be noticed that the weight of cattle in the several months each year varied considerably. About November or December the marketing of the corn-fed cattle is seen in a decided advance in weight. This continues usually through March; beginning with April there is a decline. The lowest point may be



Production of corn in United States, 1890-1904

reached in June or July, or possibly not until September or October. It is interesting to compare these two charts and follow the two lines shown thereon. The corn crop of any year, as will be seen, directly affects the weight of cattle the succeeding year.



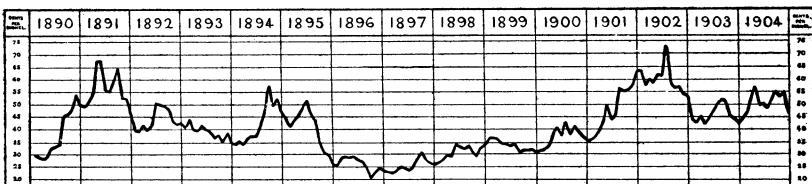
Average weight of cattle received in Chicago, 1890-1904

Another chart presents the price of corn which is the direct connecting link between the corn crop and beef prices. This chart shows the price of No. 2 cash corn in Chicago on the first of each month. The corn crop not only influences the corn price during the year the crop is growing, but also directly affects the prices during the following year. If the season is late, thus delaying the planting of corn, prices advance; or, if corn has started well and the weather through the corn belt become dry during

July or August, prices advance at that time; or, again, the corn crop may be damaged by an early frost, and the result is the same.

A comparison of the results shown in this chart with those shown in the chart on which are indicated the prices of cattle demonstrates how closely the price of beef cattle follows the price of corn. The rise and fall of these two commodities are almost identical. The prices of corn, of course, show much more abrupt changes, but the course of prices is almost always the same. The supply, and consequently the price, of fresh beef to the consumer may therefore to a great extent be said to be due to the corn crop.

To prepare a steer for prime corn-fed beef requires from 70 to



Price of No. 2 cash corn in Chicago, 1890-1904

100 bushels of corn. The cost of 70 bushels of corn on December 1, 1904, at Chicago prices, would have been \$32.64; December 1, 1901, \$44.19; December 1, 1896, \$16.28; etc. The amount realized for a 1,200-pound steer, at the mean price of good-to-extra steers in Chicago on those dates, would have been \$74.10 in 1904, \$75.00 in 1901, and \$59.40 in 1896.

To feed cattle properly requires several months, and when corn is at a high price many farmers prefer to sell their corn rather than to take the risk of losing money by feeding it to cattle. The large feeder likewise hesitates to purchase corn at extremely high prices.

The effect which the cultivation of land has on the supply of cattle is better illustrated in western Kansas than in any other state for which figures for a series of years are available. The section of Kansas west of the east county line of Phillips County at the north and Comanche County at the south (nearly corresponding to the ninety-ninth meridian) was reported by the Census of 1880 as "pre-eminently a grazing country." The number of

cattle in that section was, in 1880, 184,586; in 1890, 432,056; and in 1900, 945,444; an increase of 134 per cent. between 1880 and 1890, and 119 per cent. between 1890 and 1900.

With the middle West divided into smaller farms—a change which is rapidly taking place—the farmers will feed on a smaller scale, yet with more care, and in time will supply our country with a better grade of meat than much of that which is sold at present.

With an increased demand from abroad, and with high prices for labor and a good demand for food from our own workingmen, it must be expected that prices of fresh beef will remain on a higher level than prevailed when industrial conditions were less promising.

#### SUMMARY

Looking through the record of the past fifteen years, it is seen that, so far as demand is concerned, the most important factors are the increase of population—especially the urban population—the better industrial conditions, and the larger export trade.

As to the supply of beef cattle, one must consider the corn crop (it might even be said that one should start with the weather), which influences the price of corn and corn is absolutely necessary in order to produce the better grades of beef cattle. The price of corn in turn exercises an influence in two directions: first, on the marketing of cattle from the grass partly fed, or prime fed; and, second, on the price of cattle, as corn is the most important item in the preparation of cattle for the better grades of beef.

The price of cattle next influences the wholesale price of the most important of cattle products—fresh beef. Finally the wholesale price of fresh beef determines the retail prices of the various cuts to the consumer.

This paper brings together only what may be called the natural conditions in the beef industry. The combination of packers which generally is believed to exist may have exerted a steady influence on declining prices; or possibly may be strong enough to control to some extent the prices of cattle bought for slaughter, or the supply of fresh beef shipped to various cities, which would

seriously affect the price to the consumer. The report of the Bureau of Corporations on its investigation of the beef industry is anxiously awaited, as it is expected to furnish valuable information on many things concerning which the public has heretofore possessed but little definite knowledge.

FRED C. CROXTON.

WASHINGTON